

OAS Class 8 Elbow, wrist, and hand Part II

Special tests

1. Ligament instability test for fingers – examiner stabilizes proximal bone and applies valgus and varus stress on joint distally to holding hand
2. Thumb ulnar collateral ligament instability test (Gamekeepers or skiers' thumb) – examiner stabilizes patient hand and takes thumb into extension and applies valgus test to MCP joint stressing ulnar (medial) collateral ligament
3. Test for tight retinacular ligaments – test structures around PIP joints. PIP is held in neutral position while flexing DIP joint. If DIP does not flex tight ligaments
4. Murphy's sign (hand) – patient makes fist. If the head of the third metacarpal is at the level with second and forth metacarpal head, indicative of lunate dislocation
5. Watson (scaphoid shift) test – test scapholunate instability. Patient elbow flexed on the table. Examiner across the patient hold the wrist and scaphoid with one hand and other hand holds metacarpals. Patient hand is first place into extension and ulnar deviation. From this position examiner passively moves the hand into flexion and radial deviation while applying constant pressure on the scaphoid. If there is laxity scaphoid displaces dorsally (The shift)
6. Scaphoid stress test – examiner holds scaphoid and patient tries to radially deviate the wrist (Hand). No deviation in norm. If deviation occurs, laxity is present). (Modified Watson)
7. Piano keys test – looks for instability in distal radioulnar joint. Patient forearm on the table in pronation. Examiner stabilizes the hand of the patient to be tested. Examiner pushed down on distal ulna like on piano key.
8. Axial load test – for detecting metacarpal fractures. Examiner stabilizes patient's wrist, with other hand holds thumb or other digits and applies gentle axial compression.
9. Finkelstein test – de Quervain's syndrome. Examiner grasps the thumb and ulnar deviates the hand sharply. Positive if sharp pain occurs along distal radius. Abductor pollicis longus, extensor pollicis brevis.
10. Eichhoff's test – de Quervain's tenosynovitis. Patient makes the fist with the thumb within the fist. Examiner ulnar deviates the hand. If sharp pain along the distal radius + test
11. Tinel's sign at the wrist – examiner taps over carpal tunnel at the wrist. Positive test – numbness, tingling, paresthesia's in first three digits

12. Phalen's test – test for carpal tunnel. Position is held 30 to 60 seconds.
Patient position - flexed elbows on a table, allowing wrist to fall into full flexion. The patient is asked to push the dorsal surface of the hand together.
 13. Reverse Phalen's test – the patient maintains a position of full wrist and finger extension for 2 minutes. The pressure on carpal tunnel starts to increase after 10 second.
 14. Carpal compression test – examiner holds supinated forearm and wrist in both hands and applies direct and even pressure over median nerve in the carpal tunnel and holds for 30 seconds.
 15. Wrinkle test (O'Riain's or Leukens' wrinkle test) – patient's hands are placed in warm water for 20 minutes. Absence of wrinkling is sign of neurological deficit.
 16. Weber's (Moberg's) Two-Point discrimination test - to detect two point discrimination deficit. Fingertips 2 to 8 mm apart
 17. Allen test – first line standard test to assess blood flow to the hand. Look at physical exam notes.
1. Reflexes and cutaneous distribution

Elbow, Wrist and Hand Disorders

1. Medial Epicondylitis of the Elbow
 - a. Gradual onset due to overuse
 - b. Pain is at the anteriomedial aspect of the elbow
 - c. Worse after activity (Nagging ache)
 - d. Observation – normal
 - e. AROM – normal, pain can be present on wrist and finger flexion and wrist extension
 - f. PROM – the same
 - g. RIM – pain on wrist flexion
 - h. Palpation – pain over medial epicondyle of humerus and common flexor tendon
 - i. Special test - + Medial epicondylitis test
2. Lateral Epicondylitis of the Elbow
 - a. Gradual onset due to overuse (one time severe stress on common extensor tendon)
 - b. Sharp pain over lateral elbow
 - c. Difficulty to pick up objects, while forearm is pronated
 - d. Observation – normal

- e. AROM – full/normal , with pain at the end of extension
- f. PROM – pain on passive wrist flexion
- g. RIM – pain on resisting extension of the wrist
- h. Palpation – pain around lateral epicondyle and common extensor tendon
- i. Special tests - Cozen's (I), Mills (II), method 3

3. Olecranon Bursitis

- a. Gradual onset
- b. Pain on the posterior elbow, with sharp pain when elbow is rested on hard surfaces
- c. Observation: Swelling with redness (very acute or severe case)
- d. AROM: normal, pain at full flexion
- e. PROM: the same
- f. RIM: normal
- g. Palpation: hard to reproduce symptoms

4. Ulnar Nerve Entrapment (Cubital Tunnel Syndrome)

- a. Gradual onset
- b. Patient complaints of tingling, pain , numbness in fingers 5 and 4.
- c. Observation: in early disease normal, later atrophy of hypothenar eminence
- d. AROM: normal
- e. PROM: normal
- f. RIM; weakness of the grip
- g. Special test: + Tinel sign at the medial elbow

5. Median Nerve Entrapment (Pronator teres syndrome)

- a. Median nerve is entrapped and compressed in the elbow between two heads of pronator teres (sports with holding hand equipment = tennis, golf)
- b. Patient complaints of symptoms like pain, numbness, paresthesia in lateral hand and lateral three fingers
- c. Observation: thenar eminence atrophy (less than in carpal tunnel syndrome), mostly normal
- d. AROM: normal
- e. PROM: normal
- f. RIM: weakness
- g. Special test: pronator teres syndrome test +
- h. What is the next step if you cannot differentiate between CTS and MNE?
Neurologist to get a nerve conduction test

6. Carpal Tunnel Syndrome

- a. Compression of median nerve between carpal bones and transverse ligament
- b. Patient complaints of pain, paresthesia, numbness of the lateral three fingers (Same as in median nerve entrapment). Patient can be awakened at night (2 to 4 am)
- c. Observation: at the beginning normal, later in disease atrophy of thenar eminence
- d. AROM: normal
- e. PROM: overpressure can reproduce symptoms
- f. RIM: early stage normal, late stage weakness
- g. Pain on deep palpation
- h. Special test: + Tinel sign, Phalen and reverse Phalen+

7. de Quervains Tenosynovitis

- a. The tendons of abductor pollicis longus and extensor pollicis brevis become inflamed.
- b. Sudden but due to repetitive motion
- c. Patient complaints of sudden pain that confined to lateral surface of the forearm during movements
- d. Particularly painful pinch grip
- e. Observation: swelling at the lateral wrist
- f. AROM: some decrease in ulnar deviation of the wrist (adduction)
- g. PROM: the same
- h. RIM: pain on abduction and extension of the thumb
- i. Palpation: crepitation over lateral wrist during movements
- j. Special tests: Finkelstein's test +

8. Metacarpophalangeal Joint Injury of the Thumb (Ulnar Collateral Ligament Injury)

- a. Sudden trauma like falling while carrying something in the hand
- b. Sudden pain and swelling at the base of the thumb followed by instability and weakness of the joint
- c. Observation: swelling of the MCP joint area
- d. AROM: pain on abduction and extension of the thumb
- e. PROM: the same
- f. RIM: Pain at the end of the abduction
- g. Palpation: tenderness

9. Osteoarthritis of the Carpometacarpal Joint of the Thumb

- a. No specific cause, gradual onset
- b. Aching pain at the base of the thumb, worse with prolonged activities
- c. Pain during writing, opening jar etc
- d. AROM: limitation in all direction
- e. PROM: Pain at the end of the range in all directions. Pain on compression with thumb rotation
- f. Palpation: soft tissue thickening

10. Trigger Finger

- a. Nodular thickening of the flexor tendon, and/or thickening of the palmar tendon sheath
- b. Gradual onset, risk factor hand tool use
- c. Produces swelling and restriction of finger flexion and extension. Most difficult is to straighten flexed fingers. Clicking sound during flexion (like a pop sound). Most common is third and forth fingers
- d. AROM: Limited extension (need assistance to extended flexed digits)
- e. PROM: Normal
- f. RIM: normal strength
- g. Palpation: can feel the snap (Pop) of affected tendons. Tenderness over flexor tendon sheath

11. Wrist Flexor Tendonitis

12. Dupuytren's Contracture

13. Wrist Sprain